

# Graduate Student Research Day 2014

## Florida Atlantic University

### **CHARLES E. SCHMIDT COLLEGE OF SCIENCE**

#### **The Effect of Sea Level Rise on *Juncus roemerianus*'s Ability To Remain An Environmental Restoration Indicator Species**

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*Juncus roemerianus*, the black rush, has long been used in restoration projects in south Florida because of its unique ability to live in both freshwater and saltwater. In particular, it has been used as an indicator of salt-water incursion due to its differing physical forms in varying levels of salinity. When found in freshwater, it can reach heights over 2.1 meters, yet when found in hypersaline water, it becomes dwarfed and only 1 meter in height. Because of its dramatic differences in physical appearance due to salinity, it has provided an easy and fairly cheap method of determining an area's localized salinity level. Most of *Juncus roemerianus*'s range in Florida lies around the coasts, which most models predict will experience significant changes due to sea level rise in the not so distant future. The purpose of this study is to determine whether the black rush can remain an environmental restoration indicator species in conditions influenced by sea level rise. This study will take place in the FAU Boca greenhouse and will target increased water levels and increased pH as the main conditions affected by sea level rise. If this study finds that increased water levels and pH do not significantly change the appearance of *Juncus roemerianus* in varying salinity, then this plant can confidently remain an indicator of salt-water incursion in the future. Conversely, if these conditions do change the appearance of *Juncus roemerianus*, then this plant may not remain an indicator species in South Florida in the future.